AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS

1. (currently amended) A bi-directional planar light circuit transceiver device for separating optical signals at first and second wavelengths from one another from a single input signal source, the first wavelength different from the second wavelength, comprising

a planar light circuit comprising an internal waveguide structure adapted to direct optical signals from a single input signal source in the planar light circuit; [[and]]

a wavelength selective filter configured to pass a band of signals centered at said first wavelength and to reflect a band of signals centered at said second wavelength, the bands of signals centered at the first and second wavelengths comprised in the single input signal source, the wavelength selective filter positioned external to the planar light circuit and placed in energy coupled proximity to an external surface of the planar light circuit; and

a first signal detector and a second signal detector positioned such that the first signal detector detects the band of signals centered at said first wavelength and the second signal detector detects the band of signals centered at said second wavelength.

2. (cancelled)

3. (currently amended) A bi-directional planar light circuit transceiver device as in claim 1 [[2]] wherein at least one of [[said]] the first signal detector and the second signal detector is placed in energy-coupled proximity to the wavelength selective filter.

4. (previously presented) A bi-directional planar light circuit transceiver device as in claim 1 wherein the wavelength selective filter is placed in energy-coupled proximity to said external surface of the planar light circuit using a deposition process.

5. (previously presented) A bi-directional planar light circuit transceiver device as in claim 1 wherein said internal waveguide structure has an input end and an output end, and the wavelength selective filter placed in a proximal relationship with said input end.

6. (previously presented) A bi-directional planar light circuit transceiver device as in claim 1 wherein said internal waveguide structure has an input end and an output end, and the wavelength selective filter placed in a proximal relationship with said output end.

7. (previously presented) A bi-directional planar light circuit transceiver device as in claim 1 wherein said internal waveguide structure comprises a bi-directional branching waveguide having input and output ports.

8. (previously presented) A bi-directional planar light circuit transceiver device as in claim 1 wherein the planar light circuit is fabricated with material having intrinsic wavelength selection absorption properties to pass signals at said first wavelength and to reflect signals at said second wavelength.

9. (previously presented) A bi-directional planar light circuit transceiver device as in claim 7 wherein the wavelength selective filter is placed in a proximal relationship with said branching waveguide input port.

10. (previously presented) A bi-directional planar light circuit transceiver device as in claim 7 wherein the wavelength selective filter is placed in a proximal relationship with said branching waveguide output port.

11. (currently amended) A bi-directional planar light circuit transceiver device for separating optical signals at first and second wavelengths from one another from a single input signal source, the first wavelength different from the second wavelength, comprising

a planar light circuit comprising an internal waveguide structure adapted to direct optical signals from a single input wavelength source in the planar light circuit; [[and]]

mirror means configured to pass signals at said first wavelength and to reflect signals at said second wavelength, said mirror means positioned external to the planar light circuit and placed in energy coupled proximity to an external surface of the planar light circuit, the signals at the first and second wavelengths comprised in the single input wavelength source; and

a first signal detector and a second signal detector positioned such that the first signal detector detects the signals at said first wavelength and the second signal detector detects the signals at said second wavelength.

12. (previously presented) A bi-directional planar light circuit transceiver device as in claim 11 wherein the planar light circuit is fabricated with material having intrinsic wavelength selection absorption properties to pass signals at said first wavelength and to reflect signals at said second wavelength.

13. (currently amended) A planar light circuit transceiver device for separating optical signals at first and second wavelengths in a single input signal source from one another, the first wavelength different from the second wavelength, comprising

a wavelength selective filter configured to pass a band of signals centered at said first wavelength and to reflect a band of signals centered at said second wavelength, the bands of signals centered at the first and second wavelengths comprised in the single input signal source, the wavelength selective filter positioned external to a planar light circuit and placed in energy coupled proximity to an external surface of the planar light circuit; and

the planar light circuit comprising an internal branching waveguide structure having an input end and first and second output ends, said input end adapted to direct said first wavelength signals to a first signal detector at said first output end and to direct said second wavelength signals to a second signal detector ~~receive signals from an external signal source~~ at said second output end.

14. (previously presented) A planar light circuit transceiver device as in claim 13 wherein said external signal source is a laser diode.

15. (previously presented) A planar light circuit transceiver device as in claim 13 wherein said external signal source is a LED.

16. (previously presented) A planar light circuit transceiver device as in claim 13 wherein said external signal source is directly attached to the planar light circuit.

17. (previously presented) A planar light circuit transceiver device as in claim 13 wherein said external signal source is placed in close proximity to the planar light circuit.

18. (previously presented) A planar light circuit transceiver device as in claim 13 wherein said internal branching waveguide structure comprises tapered waveguides.

19. (previously presented) A bi-directional planar light circuit transceiver device as in claim 11 wherein the planar light circuit is fabricated with material having intrinsic wavelength selection absorption properties to pass signals at said first wavelength and to reflect signals at said second wavelength.

20. (currently amended) A planar light circuit transceiver assembly for separating optical signals at first and second wavelengths in a single input signal source from one another, the first wavelength different from the second wavelength, said assembly comprising

a planar light circuit comprising an internal waveguide structure adapted to direct optical signals in the planar light circuit;

a wavelength selective filter configured to pass a band of signals centered at said first wavelength and to reflect a band of signals centered at said second wavelength, the bands of signals centered at the first and second wavelengths comprised in the single input signal source, the wavelength selective filter positioned external to the planar light circuit and placed in energy coupled proximity to an external surface of the planar light circuit; [[and]]

means for directing input optical signals to the wavelength selective filter; and

a first signal detector and a second signal detector positioned such that the first signal detector detects the band of signals centered at said first wavelength and the second signal detector detects the band of signals centered at said second wavelength.

21. (previously presented) A planar light circuit transceiver assembly as in claim 20 wherein said means for directing input optical signals comprises an optical fiber in a V-groove structure.

22. (previously presented) A planar light circuit transceiver assembly as in claim 21 wherein said V-groove structure has a polished end face cut at a forty-five degree angle.

23. (previously presented) A planar light circuit transceiver assembly as in claim 21 wherein said V-groove structure is defined in a substrate, said optical fiber captured in said V-groove structure using an adhesive coating to adhere a glass cover layer over said optical fiber to said substrate.

24. (previously presented) A planar light circuit transceiver assembly as in claim 21 comprising a component for detecting signals at said second wavelength located on the surface of said V-groove structure.

25. (previously presented) A planar light circuit transceiver assembly as in claim 23 wherein said substrate is glass.

26. (previously presented) A planar light circuit transceiver assembly as in claim 23 wherein said substrate is silicon.

27. (previously presented) A planar light circuit transceiver assembly as in claim 20 wherein said means for directing input optical signals comprises an optical fiber in a ferrule structure.

28. (currently amended) A planar light circuit transceiver assembly as in claim 27 ~~comprising~~ wherein the second signal detector is positioned ~~a component~~ for detecting signals at said second wavelength located on the surface of said ferrule structure.

29. (previously presented) A planar light circuit transceiver assembly as in claim 27 wherein said ferrule structure has a polished end face cut at a forty-five degree angle.

30. (previously presented) A planar light circuit transceiver assembly as in claim 27 wherein said ferrule structure is made of glass.

31. (previously presented) A planar light circuit transceiver assembly as in claim 27 wherein said ferrule structure is made of silicon.

32. (previously presented) A planar light circuit transceiver assembly as in claim 27 wherein said ferrule structure is made of a near infrared transparent material.

33. (currently amended) A device for separating signals at first and second wavelengths in a single input signal source from one another, the first wavelength different from the second wavelength, comprising

a wave guide structure for transmitting said signals along an optical path between an input and [[an]] a first output and a second output defined at the surface of the wave guide structure including first and second wave guides for defining first and second light paths from said input to said first and second outputs respectively; [[and]]

a wavelength selective filter on the surface of the wave guide structure in said optical path for separating out one of said first and second wavelengths, the signals at the first and second wavelengths comprised in the single input signal source, the wavelength selective filter external to the wave guide structure; and

a first signal detector located at said first output for detecting signals at said first wavelength and a second signal detector located at said second output for detecting signals at said second wavelength.

34. (previously presented) A device as in claim 33 wherein said wavelength selective filter transmits said first wavelength and reflects said second wavelength.

35. (previously presented) A device as in claim 33 wherein said wavelength selective filter is positioned in said optical path on the surface of the wave guide structure at said output.

36. (cancelled)

37. (currently amended) A device comprising

a folded path optical structure having first and second edges, the folded path optical structure comprising first and second optical waveguides, [[and]]

a wavelength selective filter at the first edge of the folded path optical structure, the wavelength selective filter operative to separate bands of signals centered at a first wavelength from signals centered at a second wavelength comprised in a single input signal source, the first wavelength different from the second wavelength, the wavelength selective filter-positioned external to the folded path optical structure,

the waveguides having first and second ends, the first ends communicating with the wavelength selective filter, the waveguides for directing light in said first waveguide into said second waveguide; and.

a light signal source communicating with the second end of said second waveguide.

38. (previously presented) A device as in claim 37 wherein said waveguides are adapted to direct light at close to a normal incidence angle to said wavelength selective filter.

39. (cancelled)

40. (previously presented) A device as in claim 37 further comprising an optical fiber signal input communicating with the second end of said first waveguide.

41. (currently amended) A planar light circuit transceiver device for separating optical signals at first and second wavelengths from a single input signal source from one another, the first wavelength different from the second wavelength, comprising

a planar light circuit comprising an internal branching waveguide structure having an input end and first and second output ends, the input end adapted to direct the first wavelength signal to a first detector at the first output end and to a second detector at the second output end ~~receive signals from an external signal source at the second output end~~ whereby the detector at the first output end detects a clear first wavelength signal with high extinction wavelength isolation from the second wavelength signal; and

a wavelength selective filter configured to pass a band of signals centered at said first wavelength and to reflect a band of signals centered at said second wavelength, the bands of signals centered at the first and second wavelengths comprised in the single input signal source, the wavelength selective filter positioned external to the planar light circuit and placed in energy coupled proximity to an external surface of the planar light circuit.

42.-52. (canceled)

53. (previously presented) A bi-directional planar light circuit transceiver device as in claim 1 wherein the wavelength selective filter is placed on the surface of the planar light circuit.

54. (previously presented) A bi-directional planar light circuit transceiver device as in claim 11 wherein the mirror means is placed on the surface of the planar light circuit.

55. (previously presented) A planar light circuit transceiver device as in claim 13 wherein the wavelength selective filter is placed on the surface of the planar light circuit.

56. (previously presented) A planar light circuit transceiver assembly as in claim 20 wherein the wavelength selective filter is placed on the surface of the planar light circuit.

57. (previously presented) A device as in claim 33 wherein the wavelength selective filter is placed on the surface of the wave guide structure.

58. (previously presented) A device as in claim 37 wherein the wavelength selective filter is placed on the surface of the folded path optical structure.

59. (currently amended) A bi-directional transceiver device that separates optical signals at a first wavelength from optical signals at a second wavelength from a single input signal source, the first wavelength different from the second wavelength, comprising

a planar light circuit comprising an internal waveguide structure adapted to direct optical signals in the planar light circuit; and

a wavelength selective filter configured to pass a first band of signals centered at a first wavelength and to reflect a second band of signals centered at a second wavelength, the bands of signals centered at the first and second wavelengths comprised in the single input signal source, the wavelength selective filter positioned

external to the planar light circuit and placed in energy coupled proximity to an external surface of the planar light circuit,

wherein the first band of signals centered at the first wavelength travel in two directions within the internal waveguide structure; and

a first signal detector and a second signal detector positioned such that the first signal detector detects the band of signals centered at said first wavelength and the second signal detector detects the band of signals centered at said second wavelength.

60. (previously presented) A bi-directional transceiver device as in claim 59 wherein the wavelength selective filter is placed on the surface of the planar light circuit.

61. (previously presented) A bi-directional transceiver device as in claim 59 wherein the wavelength selective filter has a variable thickness.

62. (previously presented) A bi-directional transceiver device as in claim 59 wherein the wavelength selective filter comprises a dichroic wavelength selective filter.

63. (previously presented) A bi-directional transceiver device as in claim 59 wherein the wavelength selective filter comprises an interference wavelength selective filter.

64. (new) A bi-directional transceiver device as in claim 1 wherein said waveguides comprise an aperture having a first surface area and at least one of said first and second signal detectors comprises a second surface area, said second surface area being at least about 5 times larger than said first surface area.

65. (new) A bi-directional transceiver device as in claim 13 wherein said waveguides comprise an aperture having a first surface area and at least one of said

first and second signal detectors comprises a second surface area, said second surface area being at least about 5 times larger than said first surface area.

66. (new) A bi-directional transceiver device as in claim 20 wherein said waveguides comprise an aperture having a first surface area and at least one of said first and second signal detectors comprises a second surface area, said second surface area being at least about 5 times larger than said first surface area.